

## Water Quality Standards Advisory Committee

### MEETING MINUTES

Thursday, January 10, 2013 1:30 pm – 3:30 pm

Department of Environmental Services

Rooms 112/113/114

29 Hazen Drive, Concord, NH

#### Attendees

Name	Organization
Dan Blais	Home Builders and Remodelers' Association of NH
Joe Boyer	Plymouth State University
Sam Demeritt	NH Wildlife Federation
Donna Hanscom	NH Water Pollution Control Association
John Hodsdon	NH Farm Bureau Federation
John Magee	NH Fish & Game Department
Eileen Miller	NH Association of Conservation Districts
Allan Palmer	Rivers Management Advisory Committee
Kenneth Rhodes	Associated General Contractors of NH
Jason Smith	NH Fish & Game Department
Tracy Tarr	NH Association of Natural Resource Scientists

#### DES Attendees

Ted Diers

Philip Trowbridge

Shane Csiki

Sandy Crystall

Gregg Comstock

#### 1) Introductions

The meeting began with a round of introductions.

#### 2) Approval of the 4/12/2012 meeting minutes

The minutes for the 10/11/12 meeting were approved without correction.

#### 3) New EPA Recreational Water Quality Criteria (bacteria concentrations at designated bathing beaches)

Phil Trowbridge gave an update on EPA's new recommendation for Recreational Water Quality Criteria. Copies of the slides are attached. Major points:

- In November 2012, EPA published new Recreational Water Quality Criteria guidance.
- The criteria are applicable to the primary contact recreation designated use, which is most closely associated with public bathing beaches.
- The existing NH water quality standards appear to be at least as protective as the new EPA guidance. However, DES staff are still reviewing the details of the EPA recommendation.
- DES is not planning to change the statute (RSA 485-A:8) to match the EPA recommendation at this time.
- There was some discussion among the WQSAC the implications of adopting the EPA recommendation for beach closures and NPDES permittees.

#### **4) Update from subcommittee on wetland water quality standards**

Sandy Crystal gave an update on subcommittee work on wetland water quality standards (WWQS). Copies of her slides are attached. Topics discussed by the WQSAC were:

- Effects of pesticides used by communities for mosquito control on wetland organisms.
- The importance of establishing reference sites to set an appropriate baseline for each wetland classification and geographic region.
- The difference between prime wetlands designation (a political process) and wetland water quality standards (an ecological assessment).
- Consideration of vernal pools as the universe of wetlands to be monitored and assessed. The initial work will likely focus on permanently saturated wetlands. Wetlands such as vernal pools will be tackled later.

#### **5) Plan for updating Env-Wq 1700 with new EPA recommended criteria for toxic contaminants and ammonia**

Phil Trowbridge led a discussion about updating the water quality criteria for toxic substances in Env-Wq 1700 by 2016 (see attached slides). The main points and points of discussion were:

- There have been changes to the EPA recommended criteria for over 100 toxic substances since 1999 when this section of Env-Wq 1700 was last updated.
- DES is cross-checking the current criteria in Env-Wq 1700 against the latest EPA recommendations and compiling a list of any other changes needed relative to toxic substances.
- To understand the potential impacts of the changes for dischargers, DES will attempt to catalog all NPDES permittees in New Hampshire with limits for toxic substances. If the number of permittees is large, DES will focus on those with low dilution factors and low hardness because they would be worst-case.
- The evaluation should consider laboratory method detection limits for both traditional and clean techniques.
- There was some interest in understanding what EPA and other states are doing to regulate pharmaceuticals and personal care products (PPCP).
- There was some interest in understanding how EPA and other states are using Maximum Contaminant Levels (for drinking water) in place of surface water quality criteria.
- There was some interest in nanoparticles (manufactured colloidal-size particles).
- Metals should be a priority for the research because many permittees have limits for metals.
- DES agreed to proceed with the review and to report back to the WQSAC.

#### **6) Other Business**

Some of the WQSAC members had questions/concerns about recent changes to the rainfall totals used for Alteration of Terrain permit applications. DES staff relayed the questions/concerns to the Alteration of Terrain Bureau.

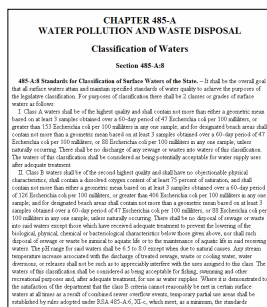
#### **7) Adjourn**

The meeting was adjourned at 3:25 pm.

**Attachments**

- Slides for Item #3 (Recreational Water Quality Criteria)
- Slides for Item #4 (Wetland Water Quality Standards)
- Slides for Item #5 (Criteria for Toxic Substances)

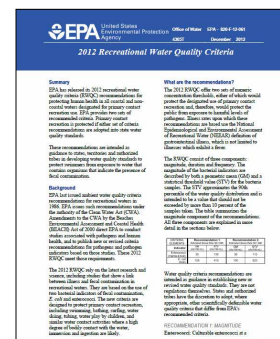
- Defined in statute, RSA 485-A:8
  - FW beaches
  - Class A ambient
  - Class B ambient
  - Tidal waters (including tidal beaches)
- 60-day averaging period for geomeans



- Applicable to primary contact recreation
  - Fresh waters
  - Tidal waters

- Adopted 11/26/12

<http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/index.cfm>



<b><i>E. coli</i> Concentration</b>	Geomean (cts/100ml)	Upper Limit (cts/100ml)
NH FW Beaches	47	88
NH Class A	47	153
NH Class B	126	406
New EPA Guidance	126*	410 (STV*)

STV = "Statistical Threshold Value": not to be exceeded by more than 10% of samples

Enterococcus Concentration	Geomean (cts/100ml)	Upper Limit (cts/100ml)
NH Tidal Beaches	35	104
NH Class B	35	104
New EPA Guidance	35*	130 (STV*)

STV = "Statistical Threshold Value", not to be exceeded by more than 10% of samples

## Wetland Water Quality Standards Subcommittee - Status Report

Sandy Crystall, PWS  
January 10, 2013



### Since April 2012...

#### Subcommittee met:

- April
  - Overview of Wetland Assessment and wetland WQS
  - Wetland mapping
- May
  - Overview of 2011 EPA's NWCA sampling and rapid assessment method work
- October
  - Presentations on biomonitoring (Dave Neils) and Wetlands biomonitoring (Maine DEP- Jeanne DiFranco)

Set up webpage and FTP server with additional documents

## Biological indices are used to interpret narrative criteria.

NH DES Administrative Rule Env-Wq 1700 – water quality criteria

Env-Wq 1703.19 Biological and Aquatic Community Integrity.

- (a) The surface waters shall support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region.
- (b) Differences from naturally occurring conditions shall be limited to non-detrimental differences in community structure and function.

**Biologic index – the measures of condition**

Bio-criteria – the threshold which the measures of condition are compared against

Based on outcomes, biological community is assessed as meeting or not meeting criteria/not supporting designated use (impairment determination)

### Biological Indices To Date:

- Serve as the core indicator of Aquatic Life Use (ALU) for streams and rivers for water quality reports
- 100+ assessments completed in 2012 305(b) / 303(d) water quality report
- Utilized in 2008/09 to complete statewide probabilistic assessments of all state's streams and rivers
- Used in assessing impacts, related stressors (nutrients, stormwater) by investigating stressor : response curves
- Utilized for fish and macroinvertebrates, but could include other "assemblage types" or non-biological attributes

**... Are the most direct and cost-effective measure of condition**

### What Indices Are Not:

- Short-term commitments
- Indicators of cause of impairment
- Snake oil

## Anatomy of a biological index: The multi-metric approach

- 1) Identification of "reference" sites – baseline for building foundation of index
- 2) Classification system/stratification – to reduce natural variability in community composition that is attributable to environmental differences
- 3) Identification of metrics most responsive to disturbance
- 4) Development of scoring system
- 5) Selection of "threshold"
- 6) Validation testing

A well-constructed index is:

- Useful
- Low maintenance
- Efficient
- Valuable
- Protective

## Maine's Annual Monitoring

- Lacustrine and riverine fringe wetlands
- Emergent and aquatic bed vegetation
- Water depth < 1 meter in area sampled
- Rotating basin schedule (5 basins)



## Maine

- Reference Site Criteria
  - 51 reference sites selected using objective criteria:
    - Watershed land use 95% or greater "natural" (forest or wetland)
    - Total DEP Human Disturbance Score  $\leq 10$ ; no single category score  $> 5$
    - Specific conductance  $< 100 \mu\text{S}/\text{cm}$  (only 8 of 51 sites exceeded  $50 \mu\text{S}/\text{cm}$ )
- Tolerance Values for Wetland Invertebrates (Maine Tolerance Index)
  - Calculated for individual taxa using species optima. Resulting tolerance values scaled from 1 - 100.
  - Three categories determined for taxa tolerance metrics:
    - Sensitive taxa: values  $\leq 22.0$
    - Intermediate taxa: 22.1 - 42.9
    - Eurytopic taxa: values  $\geq 43.0$

## Maine's Wetland Macroinvertebrate Provisional Linear Discriminant Model Variables

Total **abundance**  
Ephemeroptera abundance  
Odonate **relative abundance**  
Trichoptera relative abundance  
Shredder taxa relative abundance  
Non-insect **relative richness**  
Sensitive taxa abundance  
Sensitive taxa relative abundance  
Sensitive **taxa richness**  
Intermediate taxa relative abundance  
Intermediate taxa richness  
**Ratio** of sensitive to eurytopic taxa abundance

## Maine's Next Steps

- Test provisional macroinvertebrate model as new data are collected and refine as necessary
- Incorporate model into rules as wetland-specific aquatic life use criteria
- Complete analysis of wetland algae data and begin algae model development
- Pilot monitoring and assessment projects for other biological assemblages and wetland types (including forested wetlands)

## Our Next Steps

Prepare draft plan to incorporate:

- Information from research
- Our knowledge and experience with biomonitoring, including two seasons of using different assessment approaches for wetlands
- Potential application of Maine's approach (test applicability)
- Incorporate other assessment methods to enable transition to other wetland types in the future
  - For example, Floristic Quality Assessment Index

## Questions?

The health of our waters is the principal measure of how we live on the land.

- Luna Leopold

## Water Quality Criteria for Toxic Substances

- Established in rule, Env-Wq 1703.21
- Last updated 1999
- New EPA guidance for:
  - 104 substances
  - 8 metals
  - Freshwater ammonia (soon)

[illegible]

## Process for Identifying Changes to Env-Wq 1703.21

- Cross check NH rules vs new EPA guidance
- Compare criteria to laboratory detection limits
- Research other suggested changes
  - Mercury - fish tissue conc. vs water conc.
  - Use hardness values <25 mg/L
  - Biotic ligand models
  - Aluminum – total vs acid soluble
  - Arsenic – dissolved vs inorganic
  - Seeking input for any other needed changes...

## Process for Identifying Impacts of Updated Criteria on Permittees

- Catalog NPDES permits with limits for toxic substances
- Prioritize by:
  - Low dilution factor
  - Low hardness
- Estimate potential impacts of rule change